Honeywell

# NXS
# Variable Frequency Drives

SPECIFICATION DATA

*Variable Frequency Drives (VFD) accept a control input and then output tailored control signal(s) to operate as many as six devices (fans, pumps, etc.) with maximum efficiency. The VFD can be field-programmed without any extra devices or computer connections.*

## FEATURES

- **Seven configurable applications built in.**
- **Easy commissioning through software or control panel.**
- **Devices can be wall-mounted or panel-mounted.**
- **Eleven protective functions (see Form 63-2600, Users Manual, Technical Data section).**
- **Compact Size.**
- **Insulated gate bi-polar transistor (IGBT) technology.**

## SPECIFICATIONS

**Wiring:**
- ❑ Wire Type and Size is Model and Application Dependant.
- ❑ For NXS details, see form 63-2600.

**Power Supply:**
- ❑ 208-240 Vac, 45-66 Hz, +10%, -15%.
- ❑ 380-500 Vac, 45-66 Hz, +10%, -15%.
- ❑ 525-690 Vac, 45-66 Hz, +10%, -15%.

**Ambient Ratings:**
- ❑ Temperature Ranges:
  - ❑ Operating: 14°F to 104°F (-10°C to 40°C).
  - ❑ Storage: -40°F to 140°F (-40°C to 60°C).
- ❑ Humidity Range: 5 to 95% RH (non-condensing).

**Control Inputs:**
- ❑ Voltage (Analog): 0-10 Vdc, 200k ohm differential.
  - ❑ Resolution: 0.1%, ±1% accuracy.
- ❑ Current (Analog): 4-20 mA, 250 ohm differential.
- ❑ Digital: up to six, 24 Vdc, positive or negative logic.

**Control Output:**
- ❑ Reference Voltage: 10V, +3%; maximum load 10 mA.
- ❑ Auxiliary Voltage: 24V, ±15%; maximum 250 mA.
- ❑ Current (Analog): 0-20 mA, 500 ohm maximum.
  - ❑ Resolution: 10 bit.
  - ❑ Accuracy: ±2%.
- ❑ Relay: Two programmable changeover relay outputs
- ❑ Switching Capacity: 24 Vdc, 8A; 250 Vac, 8A; 125 Vdc, 0.4A.
- ❑ Digital: Open collector output, 50 mA, 48V.

**Motor Connection:**
- ❑ Continuous Output Overload Current:
  - ❑ Low: Maximum ambient temperature: 104°F (40°C); 1.1 x $I_L$ (low overload current).
  - ❑ High: Maximum ambient temperature: 122°F (50°C); 1.5 x $I_H$ (high overload current).
- ❑ Starting Torque:
  - ❑ Low Overload: 150%.
  - ❑ High Overload: 200%.
- ❑ Starting Current: 2.0 x $I_H$ 2 seconds every 20 seconds if output frequency is less than 30 Hz and temperature of heatsink is less than 140°F (up to 400k W).
- ❑ Frequency:
  - ❑ Range: 0-320 Hz.
  - ❑ Resolution: 0.01 Hz.

**Switching Frequency Range:**
- ❑ Up to and including 40 HP: 1 to 16 KHz (default: 10 kHz).
- ❑ 50 HP and higher: 1 to 10 KHz (default: 3.6 kHz).

**Mounting:**
- ❑ Mount vertically on a wall or other flat surface using four screws or bolts sized for the particular unit.

**Approvals (Model Dependant):**
- ❑ NEMA1.
- ❑ NEMA12.
- ❑ Underwriters Laboratories, Inc. (UL)
- ❑ Canadian Underwriters Laboratories, Inc. (CUL).
- ❑ CE.

**Accessories:**
- ❑ 32006627-001 RFI Filter for NXL units up to 3HP, 460V.
- ❑ 32006628-001 Panel Mount Kit, NEMA12, 6 ft.
- ❑ 32006629-001 Blank Display.
- ❑ 32006629-002 Alphanumeric Display.

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- ❑ 32006629-003 Seven-Segment Display for NXL.
- ❑ 32006630-001 Lonbus Card.
- ❑ 32006630-002 Modbus Card.
- ❑ 32006630-003 I/O Expander Card, 2RO (NO/NC).
- ❑ 32006630-004 I/O Expander Card, 6DI/DO Programmable.
- ❑ 32006630-005 I/O Expander Card, 6DI, 1DO, 2AI, 1AO.
- ❑ 32006630-006 I/O Expander Card, 1RO (NO/NC), 1RO (NO).
- ❑ 32006630-007 I/O Expander Card, 3RO (NO/NC), 1RO (NO).
- ❑ 32006630-008 I/O Expander Card, 1AI (mA), 2AO (mA).
- ❑ 32006662-001 NXL Demo Case.
- ❑ 32006662-002 NXS Demo Case.
- ❑ 32006803-001 Control Module, NXS.
- ❑ 32006803-002 Fan Assembly for Frame Size 4
- ❑ 32006803-003 Fan Assembly for Frame Size 5
- ❑ 32006803-004 Fan Assembly for Frame Size 6
- ❑ 32006803-005 Fan Assembly for Frame Size 7
- ❑ 32006803-050 Fan Assembly Frame Size 8 or bigger

**Dimensions [in. (mm)]:**

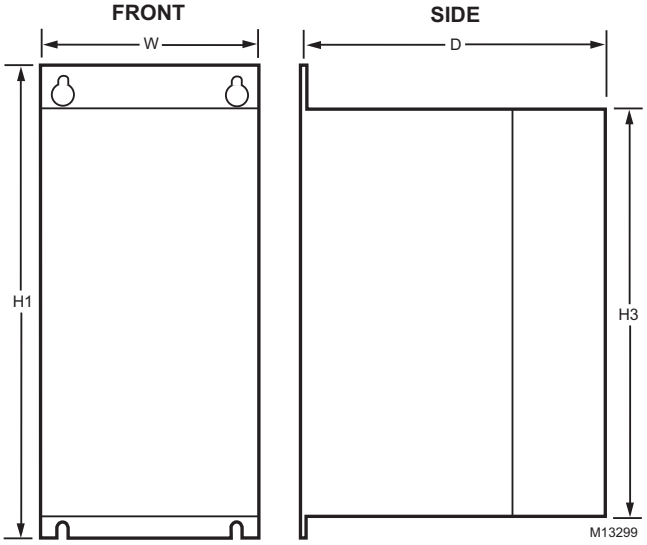


**Fig. 1. Dimensions of the NXS Variable Frequency Drives (See Table 1).**

**Table 1. NXS VFD Dimension Details.**

| Frame Size | Model Number | HP | Weight (lbs) | Dimensions WxHxD (inches) | Volts AC |
|---|---|---|---|---|---|
| Frame 4 | NXS0015A | 1.5 | 11 | 5.0x11.5x7.5 | 480 |
| | NXS0020A | 2 | | | |
| | NXS0030A | 3 | | | |
| | NXS0040A | 4 | | | |
| | NXS0050A | 5 | | | |
| | NXS0075A | 7.5 | | | |
| Frame 5 | NXS0100A | 10 | 18 | 5.7x15.4x8.4 | |
| | NXS0150A | 15 | | | |
| | NXS0200A | 20 | | | |
| Frame 6 | NXS0250A | 25 | 41 | 7.7x20.4x9.3 | |
| | NXS0300A | 30 | | | |
| | NXS0400A | 40 | | | |
| Frame 7 | NXS0500A | 50 | 77 | 9.3x23.3x10.1 | |
| | NXS0600A | 60 | | | |
| | NXS0750A | 75 | | | |
| Frame 8 | NXS1000A | 100 | 128 | 11.2x28.4x11.3 | |
| | NXS1250A | 125 | | | |
| | NXS1500A | 150 | | | |
| Frame 9 | NXS2000A | 200 | 322 | 18.9x45.3x14.3 | |
| | NXS2500A | 250 | | | |
| Frame 4 | NXS0010B | 1 | 4.2 | 3.3x7.3x6.9 | 208/230 |
| | NXS0015B | 1.5 | 11 | 5.0x11x7.5 | |
| | NXS0020B | 2 | | | |
| | NXS0030B | 3 | | | |
| | NXS0040B | 4 | | | |
| Frame 5 | NXS0050B | 5 | 18 | 5.7x15.4x8.4 | |
| | NXS0075B | 7.5 | | | |
| | NXS0100B | 10 | | | |
| Frame 6 | NXS0150B | 15 | 41 | 7.8x20.4x9.3 | |
| | NXS0200B | 20 | | | |
| Frame 7 | NXS0250B | 25 | 77 | 9.3x23.3x10.1 | |
| | NXS0300B | 30 | | | |
| | NXS0400B | 40 | | | |
| Frame 8 | NXS0500B | 50 | 128 | 11.4x29.9x13.5 | |
| | NXS0600B | 60 | | | |
| | NXS0750B | 75 | | | |
| Frame 9 | NXS1000B | 100 | 322 | 18.9x45.3x14.3 | |
| | NXS1250B | 125 | | | |

**Dimensions [in in. (mm)]:**

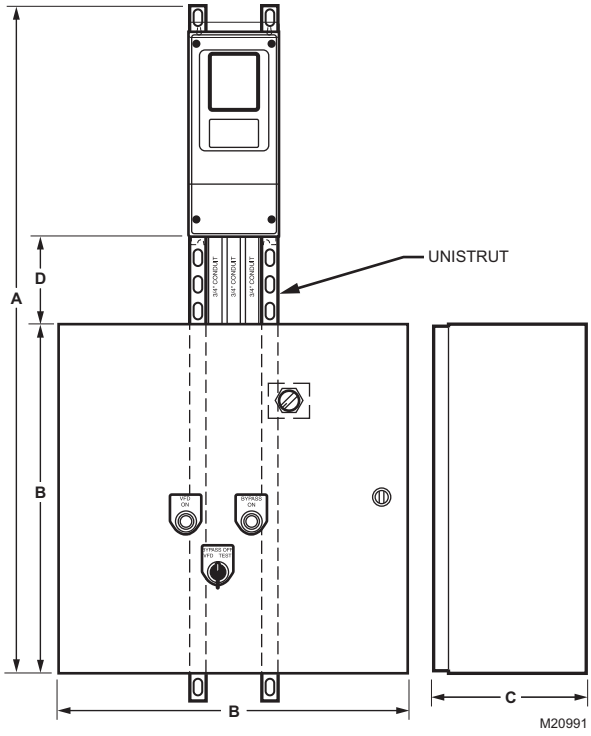


**Fig. 2. Dimensions of the NXS NEMA1 Assemblies (See Table 1).**

**Models:**

| | | | | |
|---|---|---|---|---|
| **NXS** | Variable Frequency Drive; includes standard RFI filter | | | |
| | **0010** | Motor Power | 1.0 HP | Includes AC line choke |
| | **0015** | | 1.5 HP | |
| | **0020** | | 2.0 HP | |
| | **0030** | | 3.0 HP | |
| | **0040** | | 4.0 HP | |
| | **0050** | | 5.0 HP | |
| | **0075** | | 7.5 HP | |
| | **0100** | | 10 HP | |
| | **0150** | | 15 HP | |
| | **0200** | | 20 HP | |
| | **0250** | | 25 HP | |
| | **0300** | | 30 HP | |
| | **0400** | | 40 HP | |
| | **0500** | | 50 HP | |
| | **0600** | | 60 HP | |
| | **0750** | | 75 HP | |
| | **1000** | | 100 HP | |
| | **1250** | | 125 HP | |
| | **1500** | | 150 HP | |
| | **1750** | | 175 HP | |
| | **2000** | | 200 HP | |
| | **2500** | | 250 HP | |
| | **3000** | | 300 HP | |
| | | **A** | 460V, three-phase circuitry | |
| | | **B** | 208/230V, three-phase circuitry | |
| | | **C** | 575V, three-phase circuitry | |
| | | | **10** | NEMA 1 Enclosure |
| | | | **12** | NEMA 12 Enclosure |
| | | | | **XX** Varies by model |

| | | | | |
|---|---|---|---|---|
| **NXS** | **0100** | **A** | **10** | **XX** |

NOTE: Refer also to the Quick Selection Guide (form 63-9251)

# TYPICAL SPECIFICATION

Alternating current (AC) motors with squirrel-cage rotors require a variable frequency control. The variable frequency drive (VFD) shall generate the required variable frequency through three main input voltage lines connected to an LC filter and diode bridge. This shall produce a DC voltage for an insulated gate bi-polar transistor (IGBT) bridge. The IGBT bridge shall produce a pulse-width modulated (PWM) AC voltage for the motor. A microprocessor shall control the motor according to measured signals and control commands set from the VFD control panel.

The VFD shall have seven programmable applications which can be modified using a personal computer-based commissioning tool with an optional software package, or a control panel with either an alpha-numeric or graphic LCD.

The VFD shall be UL and CE approved. The VFD shall be include built-in RFI filters and all models with 3 HP or more shall include an AC choke.

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